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L1: Entry 1 of 1

File: USPT

Jan 2, 2001

US-PAT-NO: 6168936

DOCUMENT-IDENTIFIER: US 6168936 B1

TITLE: Phenol oxidizing enzymes

DATE-ISSUED: January 2, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Huaming	Fremont	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Genencor International, Inc.	Rochester	NY			02

APPL-NO: 09/ 401476 [PALM]

DATE FILED: September 22, 1999INT-CL: [07] C12 N 9/02, C12 N 15/00, C12 P 21/06, C07 H 21/02

US-CL-ISSUED: 435/189; 536/23.1, 435/820.1, 435/69.1

US-CL-CURRENT: 435/189; 435/320.1, 435/69.1, 536/23.1

FIELD-OF-SEARCH: 536/23.1, 530/300

ART-UNIT: 162

PRIMARY-EXAMINER: Achutamurthy; PonnathapuASSISTANT-EXAMINER: Fronza; Christian L.

ATTY-AGENT-FIRM: Genencor International, Inc.

ABSTRACT:

Disclosed herein are novel phenol oxidizing enzymes naturally-produced by strains of the species *Stachybotrys* which possess a pH optima in the alkaline range and which are useful in modifying the color associated with dyes and colored compounds, as well as in anti-dye transfer applications. Also disclosed herein are biologically-pure cultures of strains of the genus *Stachybotrys*, designated herein *Stachybotrys parvispora* MUCL 38996 and *Stachybotrys chartarum* MUCL 38898, which are capable of naturally-producing the novel phenol oxidizing enzymes.

Disclosed herein is the amino acid and nucleic acid sequence for *Stachybotrys* phenol oxidizing enzyme B as well as expression vectors and host cells comprising the nucleic acid. Disclosed herein are methods for producing the phenol oxidizing enzyme as well as methods for constructing expression hosts.

42 Claims, 10 Drawing figures

Claims 1-3, 41 & 42

WEST**End of Result Set**

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TITLE: Phenol oxidizing enzymes

DATE-ISSUED: January 2, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Huaming	Fremont	CA		

US-CL-CURRENT: 435/189; 435/320.1, 435/69.1, 536/23.1

CLAIMS:

We claim:

1. An isolated phenol oxidizing enzyme having at least 68% identity to the phenol oxidizing enzyme having the amino acid sequence as disclosed in SEQ ID NO:2.
2. The phenol oxidizing enzyme of claim 1 wherein said enzyme is obtainable from a *Stachybotrys* including *S. parvispora*, *S. chartarum*, *S. kampalensis*, *S. theobromae*, *S. bisbyi*, *S. cylindrospora*, *S. dichroa*, *S. oenanthae* and *S. nilagerica*.
3. The phenol oxidizing enzyme of claim 1 having the amino acid sequence as disclosed in SEQ ID NO:2.
4. An isolated polynucleotide encoding the amino acid having the sequence as shown in SEQ ID NO:2.
5. The isolated polynucleotide of claim 4 having at least 65% identity to the nucleic acid sequence disclosed in SEQ ID NO: 1 or SEQ ID NO:3.
6. The isolated polynucleotide of claim 5 having the nucleic acid sequence as disclosed in SEQ ID NO:1.
7. The isolated polynucleotide of claim 5 having the nucleic acid sequence as disclosed in SEQ ID NO:3.
8. An isolated polynucleotide capable of hybridizing to the polynucleotide having the sequence as shown in SEQ ID NO:1 or SEQ ID NO:3 under conditions of high stringency.
9. An expression vector comprising the polynucleotide of claim 4.
10. An expression vector comprising the polynucleotide of claim 5.
11. An expression vector comprising the polynucleotide of claim 8.
12. A host cell comprising the expression vector of claim 9, claim 10, or claim 11.
13. The host cell of claim 12 that is a filamentous fungus.

14. The host cell of claim 13 wherein said filamentous fungus includes *Aspergillus* species, *Trichoderma* species and *Mucor* species.

15. The host cell of claim 13 that is a yeast.

16. The host cell of claim 15 wherein said yeast includes *Saccharomyces*, *Pichia*, *Schizosaccharomyces*, *Hansenula*, *Kluyveromyces*, and *Yarrowia* species.

17. The host cell of claim 13 wherein said host is a bacterium.

18. The host cell of claim 17 wherein said bacterium includes *Bacillus* and *Escherichia* species.

19. A method for producing a phenol oxidizing enzyme in a host cell comprising the steps of:

a) culturing a host cell comprising a polynucleotide encoding said phenol oxidizing enzyme, wherein said enzyme has at least 68% identity to the amino acid sequence disclosed in SEQ ID NO:2 under conditions suitable for the production of said phenol oxidizing enzyme; and

(b) optionally recovering said phenol oxidizing enzyme produced.

20. The method of claim 19 wherein said phenol oxidizing enzyme is obtainable from a *Stachybotrys* including *S. parvispora*, *S. chartarum*, *S. kampalensis*, *S. theobromae*, *S. bisbyi*, *S. cylindrospora*, *S. dichroa*, *S. oenanthae* and *S. nilagerica*.

21. The method of claim 19 wherein said phenol oxidizing enzyme is obtainable from *S. chartarum* and has the amino acid sequence as disclosed in SEQ ID NO:2.

22. The method of claim 19 wherein said polynucleotide comprises the sequence as shown in SEQ ID NO:1 or SEQ ID NO:3.

23. The method of claim 19 wherein said host cell includes filamentous fungus, yeast and bacteria.

24. The method of claim 23 wherein said yeast includes *Saccharomyces*, *Pichia*, *Schizosaccharomyces*, *Hansenula*, *Kluyveromyces*, and *Yarrowia* species.

25. The method of claim 23 wherein said filamentous fungus includes *Aspergillus* species, *Trichoderma* species and *Mucor* species.

26. The method of claim 25 wherein said filamentous fungus is a species of *Aspergillus*.

27. The method of claim 26 wherein the filamentous fungus is *Aspergillus niger* var. *awamori*.

28. The method of claim 23 wherein said filamentous fungus is a species of *Trichoderma*.

29. The method of claim 28 wherein said *Trichoderma* species is *Trichoderma reesei*.

30. A method for producing a host cell comprising a polynucleotide encoding a phenol oxidizing enzyme, comprising the steps of:

(a) obtaining a polynucleotide encoding a phenol oxidizing enzyme having at least 68% identity to the amino acid sequence disclosed in SEQ ID NO:2;

(b) introducing said polynucleotide into said host cell; and

(c) growing said host cell under conditions suitable for the production of said phenol oxidizing enzyme.

31. The method of claim 30 wherein said host cell includes filamentous fungus, yeast and bacteria.
32. The method of claim 31 wherein said filamentous fungus includes *Aspergillus* species, *Trichoderma* species and *Mucor* species.
33. The method of claim 32 wherein said *Aspergillus* species is *Aspergillus niger* var. *awamori*.
34. The method of claim 32 wherein said *Trichoderma* species is *Trichoderma reesei*.
35. The method of claim 31 wherein said yeast is a *Saccharomyces* species.
36. The method of claim 35 wherein said *Saccharomyces* species is *Saccharomyces cerevisiae*.
37. The method of claim 30 wherein said polynucleotide has at least 65% identity to the nucleic acid shown in SEQ ID NO:1 or SEQ ID NO:3.
38. The method of claim 30 wherein said polynucleotide has the nucleic acid sequence as shown in SEQ ID NO:1 or SEQ ID NO:3.
39. The method of claim 30 wherein said polynucleotide is introduced on a replicating plasmid.
40. The method of claim 30 wherein said polynucleotide is integrated into the host cell genome.
41. An enzymatic composition comprising the phenol oxidizing enzyme of claim 1.
42. The enzymatic composition of claim 41 comprising phenol oxidizing enzyme having the sequence as shown in SEQ ID NO:2.

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L2: Entry 1 of 1

File: USPT

Jun 4, 2002

US-PAT-NO: 6399329

DOCUMENT-IDENTIFIER: US 6399329 B1

TITLE: Phenol oxidizing enzymes

DATE-ISSUED: June 4, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Huaming	Fremont	CA		
Bodie; Elizabeth A.	San Carlos	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Genencor International, Inc.	Rochester	NY			02

APPL-NO: 09/ 468578 [PALM]

DATE FILED: December 21, 1999

PARENT-CASE:

This application is a continuation in part application of application Ser. No. 09/338,723 filed Jun. 23, 1999, which is a continuation application of application Ser. No. 09/220,871 filed Dec. 12, 1998, now abandoned.

INT-CL: [07] C12 P 21/06, C12 N 9/02, C12 N 1/20, C07 H 21/04

US-CL-ISSUED: 435/69.1; 435/189, 435/252.3, 435/254.11, 435/254.2, 536/23.2

US-CL-CURRENT: 435/69.1; 435/189, 435/252.3, 435/254.11, 435/254.2, 536/23.2

FIELD-OF-SEARCH: 435/189, 435/69.1, 435/252.3, 435/254.11, 536/23.2

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

☐ **Search Selected**☐ **Search ALL**

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>6072015</u>	June 2000	Bolle et al.	527/400
<input type="checkbox"/>	<u>6168936</u>	January 2001	Wang et al.	435/189

FOREIGN PATENT DOCUMENTS

no claims in d.p.

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 852 260	July 1998	EP	
WO 99/49020	September 1999	WO	
WO 00/05349	February 2000	WO	

OTHER PUBLICATIONS

Patent Abstract of Japan, v. 017 (638) (c-1133), Nov. 26, 1993 & JP 05 199881 A (Amano Pharmaceut Co. Ltd).
Koikeda, S. et al., "Molecular cloning of the gene for bilirubin oxidase from Myrothecium verrucaria and its expression in yeast," Journal of Biological Chemistry, v. 268(25) pp. 18801-18809 1993.
Copy of Search Report.

ART-UNIT: 1652

PRIMARY-EXAMINER: Nashed; Nashaat T.ASSISTANT-EXAMINER: Walicka; Malgorzata A.

ATTY-AGENT-FIRM: Genecor International, Inc

ABSTRACT:

The invention relates to phenol oxidizing enzymes encoded by nucleic acids capable of hybridizing to the nucleic acid having the sequence shown in SEQ ID NO: 1 and in particular phenol oxidizing enzymes obtainable from fungus. Particularly provided are nucleic acid sequences and amino acids from *Bipolaris spicifera*, *Curvularia pallescens* and *Amerosporium atrum*, and expression vectors and host cells comprising said nucleic acid sequences encoding phenol oxidizing enzymes. Additionally, methods for producing the phenol oxidizing enzymes as well as methods for constructing expression hosts are disclosed.

26 Claims, 16 Drawing figures

WEST**End of Result Set**☐ **Generate Collection** **Print**

L2: Entry 1 of 1

File: USPT

Jun 4, 2002

US-PAT-NO: 6399329

DOCUMENT-IDENTIFIER: US 6399329 B1

TITLE: Phenol oxidizing enzymes

DATE-ISSUED: June 4, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Huaming	Fremont	CA		
Bodie; Elizabeth A.	San Carlos	CA		

US-CL-CURRENT: 435/69.1; 435/189, 435/252.3, 435/254.11, 435/254.2, 536/23.2

CLAIMS:

We claim:

1. An isolated polynucleotide encoding the amino acid sequence comprising the sequence as shown in SEQ ID NO: 4.
2. The isolated polynucleotide of claim 1 comprising the nucleic acid sequence as disclosed in SEQ ID NO: 3.
3. An isolated polynucleotide encoding an oxidoreductase enzyme that hybridizes to the sequence shown in SEQ ID NO: 3 under conditions of intermediate stringency which includes hybridization at about 37.degree. C. in buffer including 25% formamide and washing at about 50.degree. C.
4. An expression vector comprising the polynucleotide of claim 1.
5. A host cell comprising the expression vector of claim 4.
6. The host cell of claim 5 that is a filamentous fungus.
7. The host cell of claim 6 wherein said filamentous fungus is selected from the group consisting of Aspergillus species, Trichoderma species, and Mucor species.
8. The host cell of claim 5 that is a yeast.
9. The host cell of claim 8 wherein said yeast is selected from the group consisting of Saccharomyces, Pichia, Schizosaccharomyces, Hansenula, Kluyveromyces, and Yarrowia species.
10. The host cell of claim 5 wherein said host is a bacterium.
11. The host cell of claim 10 wherein said bacterium is selected from the group consisting of Bacillus and Escherichia species.
12. A method for producing an oxidoreductase enzyme in a host cell comprising the steps of:

a) obtaining a host cell comprising a polynucleotide that hybridizes to the nucleic acid shown in SEQ ID NO: 1 under conditions of intermediate stringency which includes hybridization at about 37.degree. C. in buffer including 25% formamide and washing at about 50.degree. C.; and

b) growing said host cell under conditions suitable for the production of said oxidoreductase enzyme.

13. The method of claim 12 wherein said oxidoreductase enzyme comprises the amino acid sequence as disclosed in SEQ ID NO: 4.

14. The method of claim 12 wherein said polynucleotide comprises the sequence as shown in SEQ ID NO: 3.

15. A method for producing a host cell comprising an oxidoreductase enzyme comprising the steps of:

a) obtaining a polynucleotide that hybridizes to the nucleic acid shown in SEQ ID NO: 1 under conditions of intermediate stringency which includes hybridization at about 37.degree. C. in buffer including 25% formamide and washing at about 50.degree. C.;

b) introducing said polynucleotide into said host cell; and

c) growing said host cell under conditions suitable for the production of said oxidoreductase enzyme.

16. The method of claim 15, wherein said polynucleotide comprises the nucleic acid sequence shown in SEQ ID NO: 3.

17. An expression vector comprising the polynucleotide of claim 14.

18. A host cell comprising the expression vector of claim 17.

19. The host cell of claim 18, wherein said host cell is a filamentous fungus.

20. The host cell of claim 18, wherein said host cell is a bacterium.

21. A method for producing an oxidoreductase enzyme in a host cell comprising the steps of:

a) obtaining a host cell comprising a polynucleotide that hybridizes to the nucleic acid shown in SEQ ID NO: 1 under conditions of high stringency which includes hybridization at about 37.degree. C. in buffer including 50% formamide and washing at about 65.degree. C. wherein said polynucleotide is obtainable from a fungal genus other than the genus *Stachybotrys*; and

b) growing said host cell under conditions suitable for the production of said oxidoreductase enzyme.

22. The method of claim 21, wherein said oxidoreductase enzyme has the amino acid sequence shown in SEQ ID NO: 4 or said oxidoreductase enzyme has an amino acid sequence having at least 85% sequence identity to SEQ ID NO: 4.

23. The method of claim 21, wherein said host cell is selected from the group consisting of filamentous fungus, yeast, and bacterium.

24. A method for producing a host cell comprising an oxidoreductase enzyme comprising the steps of:

a) obtaining a polynucleotide that hybridizes to the nucleic acid shown in SEQ ID NO: 3 under conditions of intermediate stringency which includes hybridization at about 37.degree. C. in buffer including 25% formamide and washing at about 50.degree. C.;

b) introducing said polynucleotide into the host cell; and

c) growing said host cell under conditions suitable for the production of said oxidoreductase enzyme.

25. An isolated polynucleotide encoding an oxidoreductase enzyme comprising an amino acid sequence having at least 95% sequence identity to SEQ ID NO: 4 wherein said amino acid sequence is derived from a strain of *Bipolaris spicifera*.

26. A method for producing a host cell comprising an oxidoreductase enzyme comprising the steps of:

a) obtaining a polynucleotide that hybridizes to the nucleic acid shown in SEQ ID NO: 3 under conditions of high stringency which includes hybridization at about 37.degree. C. in buffer including 50% formamide and washing at about 65.degree. C.;

b) introducing said polynucleotide into said host cell; and

c) growing said host cell under conditions suitable for the production of said oxidoreductase enzyme.

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L4: Entry 1 of 1

File: USPT

Jul 30, 2002

US-PAT-NO: 6426410

DOCUMENT-IDENTIFIER: US 6426410 B1

TITLE: Phenol oxidizing enzymes

DATE-ISSUED: July 30, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Huaming	Fremont	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Genencor International, Inc.	Rochester	NY			02

APPL-NO: 09/ 218702 [PALM]

DATE FILED: December 22, 1998

INT-CL: [07] C12 N 15/53, C12 N 15/70, C12 N 15/75, C12 N 15/80, C12 N 15/18

US-CL-ISSUED: 536/23.2; 435/67.1, 435/252.3, 435/252.31, 435/252.33, 435/254.11, 435/254.3, 435/320.1, 435/471, 435/484, 435/485, 435/488

US-CL-CURRENT: 536/23.2; 435/252.3, 435/252.31, 435/252.33, 435/254.11, 435/254.3, 435/320.1, 435/471, 435/484, 435/485, 435/488, 435/69.1

FIELD-OF-SEARCH: 435/189, 435/69.1, 435/252.3, 435/320.1, 536/23.2

PRIOR-ART-DISCLOSED:

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
05-199882	August 1993	JP	
WO-200005349	February 2000	WO	

OTHER PUBLICATIONS

Koikeda et al., 1993, "Molecular cloning of the gene for bilirubin oxidase from Myrothecium verrucaria and its expression in yeast", The Journal of Biological Chemistry, vol. 268, pp. 18801-18809.

ART-UNIT: 1652

PRIMARY-EXAMINER: Achutamurthy; Ponnathapu

ASSISTANT-EXAMINER: Moore; William W.

ATTY-AGENT-FIRM: Ito; Richard T.

no claims in d.p.

ABSTRACT:

Disclosed herein are novel phenol oxidizing enzymes naturally-produced by strains of the species *Stachybotrys* which possess a pH optima in the alkaline range and which are useful in modifying the color associated with dyes and colored compounds, as well as in anti-dye transfer applications. Also disclosed herein are biologically-pure cultures of strains of the genus *Stachybotrys*, designated herein *Stachybotrys parvispora* MUCL 38996 and *Stachybotrys chartarum* MUCL 38898, which are capable of naturally-producing the novel phenol oxidizing enzymes.

Disclosed herein is the amino acid and nucleic acid sequence for *Stachybotrys* phenol oxidizing enzymes as well as expression vectors and host cells comprising the nucleic acid. Disclosed herein are methods for producing the phenol oxidizing enzyme as well as methods for constructing expression hosts.

25 Claims, 7 Drawing figures

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L4: Entry 1 of 1

File: USPT

Jul 30, 2002

US-PAT-NO: 6426410

DOCUMENT-IDENTIFIER: US 6426410 B1

TITLE: Phenol oxidizing enzymes

DATE-ISSUED: July 30, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Huaming	Fremont	CA		

US-CL-CURRENT: 536/23.2; 435/252.3, 435/252.31, 435/252.33, 435/254.11, 435/254.3,
435/320.1, 435/471, 435/484, 435/485 , 435/488, 435/69.1

CLAIMS:

I claim:

1. An isolated polynucleotide encoding the phenol oxidizing enzyme having the amino acid sequence shown in SEQ ID NO:2.
2. The isolated polynucleotide of claim 1, having the nucleic acid sequence as disclosed in SEQ ID NO: 3.
3. An isolated polynucleotide encoding a phenol oxidizing enzyme having the amino acid sequence disclosed in SEQ ID NO: 2 wherein said polynucleotide has at least 65% identity to the nucleic acid sequence disclosed in SEQ ID NO: 1.
4. The isolated polynucleotide of claim 3 having the nucleic acid sequence as disclosed in SEQ ID NO:1.
5. An expression vector comprising the polynucleotide of claim 1.
6. An expression vector comprising the polynucleotide of claim 2.
7. An expression vector comprising the polynucleotide of claim 3.
8. An expression vector comprising the polynucleotide of claim 4.
9. A host cell comprising the expression vector of claim 5, claim 7, claim 8, or claim 6.
10. The host cell of claim 9 that is a filamentous fungus.
11. The host cell of claim 10 wherein said filamentous fungus is selected from the group consisting of Aspergillus species, Trichoderma species and Mucor species.
12. The host cell of claim 10 that is a yeast.
13. The host cell of claim 12 wherein said yeast is selected from the group consisting of Saccharomyces, Pichia, Schizosaccharomyces, Hansenula, Kluyveromyces, and Yarrowia species.

14. The host cell of claim 12 wherein said host is a bacterium.
15. The host cell of claim 14 wherein said bacterium is selected from the group consisting of *Bacillus* and *Escherichia* species.
16. A method for producing a phenol oxidizing enzyme obtainable from *Stachybotrys* in a host cell comprising the steps of: (a) obtaining a host cell comprising a polynucleotide encoding a phenol oxidase enzyme wherein said phenol oxidizing enzyme is obtainable from *Stachybotrys chartarum* and has the amino acid sequence as disclosed in SEQ ID NO:2; (b) growing said host cell under conditions suitable for the production of said phenol oxidizing enzyme; and (c) recovering said phenol oxidizing enzyme produced.
17. A method for producing a phenol oxidizing enzyme obtainable from *Stachybotrys* in a host cell comprising the steps of: (a) obtaining a host cell comprising a polynucleotide encoding said phenol oxidizing enzyme obtainable from *Stachybotrys*, wherein said polynucleotide comprises the sequence as shown in SEQ ID NO:1 or SEQ ID NO:3; (b) growing said host cell under conditions suitable for the production of said phenol oxidizing enzyme; and (c) recovering said phenol oxidizing enzyme produced.
18. The method of claim 16 wherein said host cell is selected from the group consisting of a filamentous fungus, a yeast and a bacterium.
19. The method of claim 18 wherein said yeast is selected from the group consisting of *Saccharomyces*, *Pichia*, *Schizosaccharomyces*, *Hansenula*, *Kluyveromyces*, and *Yarrowia* species.
20. The method of claim 10 wherein said filamentous fungus is selected from the group consisting of *Aspergillus* species, *Trichoderma* species and *Mucor* species.
21. The method of claim 20 wherein said filamentous fungus is a species of *Aspergillus*.
22. The method of claim 21 wherein the filamentous fungus is *Aspergillus niger* var. *awamori*.
23. The method of claim 18 wherein said filamentous fungus is a species of *Trichoderma*.
24. The method of claim 23 wherein said *Trichoderma* species is *Trichoderma reesei*.
25. A method for producing a host cell comprising a polynucleotide encoding a phenol oxidizing enzyme obtainable from *Stachybotrys* wherein said polynucleotide has the nucleic acid sequence as shown in SEQ ID NO:1 or SEQ ID NO:3 obtaining a polynucleotide encoding said phenol oxidizing enzyme; (a) introducing said polynucleotide into said host cell; and (b) growing said host cell under conditions suitable for the production of said phenol oxidizing enzyme.

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<u>L9</u>	L7 and L8	9	<u>L9</u>
<u>L8</u>	((("536/23.2")![ccls]) or (("435/189")![ccls]) or (("435/69.1")![ccls]))	6176	<u>L8</u>
<u>L7</u>	phenol adj5 (oxidase or oxidizing)	83	<u>L7</u>

DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR

<u>L6</u>	L3 or L5	25	<u>L6</u>
<u>L5</u>	L1 and L4	11	<u>L5</u>
<u>L4</u>	((("536/23.2")![ccls]))	3985	<u>L4</u>
<u>L3</u>	L1 and L2	21	<u>L3</u>
<u>L2</u>	((("435/189")![ccls]))	837	<u>L2</u>
<u>L1</u>	phenol adj5 (oxidase or oxidizing)	344	<u>L1</u>

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L6: Entry 1 of 25

File: USPT

Jan 21, 2003

US-PAT-NO: 6509307

DOCUMENT-IDENTIFIER: US 6509307 B1

TITLE: Detergent compositions comprising phenol oxidizing enzymes from fungi

DATE-ISSUED: January 21, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bodie; Elizabeth Ann	San Carlos	CA		
van der Velden; Sebastiaan	Vlaardingen			NL
de Vries; Cornelis Hendrikus	Vlaardingen			NL
Wang; Huaming	Fremont	CA		

US-CL-CURRENT: 510/226; 435/189, 435/911, 530/350, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RWC	Draw Desc	Image
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☐ 2. Document ID: US 6426410 B1

L6: Entry 2 of 25

File: USPT

Jul 30, 2002

US-PAT-NO: 6426410 ✓

DOCUMENT-IDENTIFIER: US 6426410 B1

TITLE: Phenol oxidizing enzymes

DATE-ISSUED: July 30, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Huaming	Fremont	CA		

US-CL-CURRENT: 536/23.2; 435/252.3, 435/252.31, 435/252.33, 435/254.11, 435/254.3, 435/320.1, 435/471, 435/484, 435/485, 435/488, 435/69.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RWC	Draw Desc	Image
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☐ 3. Document ID: US 6399329 B1

L6: Entry 3 of 25

File: USPT

Jun 4, 2002

US-PAT-NO: 6399329

DOCUMENT-IDENTIFIER: US 6399329 B1 ✓

TITLE: Phenol oxidizing enzymes

DATE-ISSUED: June 4, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Huaming	Fremont	CA		
Bodie; Elizabeth A.	San Carlos	CA		

US-CL-CURRENT: 435/69.1; 435/189, 435/252.3, 435/254.11, 435/254.2, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw Desc	Image
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☐ 4. Document ID: US 6387688 B1

L6: Entry 4 of 25

File: USPT

May 14, 2002

US-PAT-NO: 6387688

DOCUMENT-IDENTIFIER: US 6387688 B1

**** See image for Certificate of Correction ****

TITLE: DNA fragments having basidiomycete-derived promoter activity and expression of foreign genes under control of the promoter activity

DATE-ISSUED: May 14, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shishido; Kazuo	Kanagawa			JP
Kajiwarra; Susumu	Kanagawa			JP
Tsukamoto; Akira	Tokyo			JP

US-CL-CURRENT: 435/254.11; 435/189, 435/69.1, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC	Draw Desc	Image
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☐ 5. Document ID: US 6384007 B1

L6: Entry 5 of 25

File: USPT

May 7, 2002

US-PAT-NO: 6384007

DOCUMENT-IDENTIFIER: US 6384007 B1

TITLE: Method and composition for enhancing the activity of an enzyme

DATE-ISSUED: May 7, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Convents; Daniel	Vlaardingen			NL
Doornink; Monique	Vlaardingen			NL
Koek; Jean Hypolites	Vlaardingen			NL
Thornthwaite; David William	Bebington			GB
Zwets; Nicole	Vlaardingen			NL

US-CL-CURRENT: 510/392; 435/183, 435/189, 510/305, 510/306, 510/311, 510/320, 510/374,
510/375, 510/393, 510/530, 8/137 , 8/401

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMIC	Draw Desc	Image
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☐ 6. Document ID: US 6355461 B2

L6: Entry 6 of 25

File: USPT

Mar 12, 2002

US-PAT-NO: 6355461

DOCUMENT-IDENTIFIER: US 6355461 B2

TITLE: Non-aqueous, liquid, enzyme-containing compositions

DATE-ISSUED: March 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henriksen; Lotte Rugholm	Vanl.o slashed.se			DK
Lykke; Mads	Br.o slashed.nsh.o slashed.j			DK

US-CL-CURRENT: 435/189; 435/267

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMIC	Draw Desc	Image
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☐ 7. Document ID: US 6346401 B1

L6: Entry 7 of 25

File: USPT

Feb 12, 2002

US-PAT-NO: 6346401

DOCUMENT-IDENTIFIER: US 6346401 B1

TITLE: Modification of polysaccharides by means of a phenol oxidizing enzyme

DATE-ISSUED: February 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kierulff; Jesper Vallentin	Roskilde			DK

US-CL-CURRENT: 435/101; 435/136, 435/142, 435/189, 435/190, 435/72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMIC	Draw Desc	Image
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☐ 8. Document ID: US 6187580 B1

L6: Entry 8 of 25

File: USPT

Feb 13, 2001

US-PAT-NO: 6187580

DOCUMENT-IDENTIFIER: US 6187580 B1

TITLE: Pectate lyases

DATE-ISSUED: February 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Andersen; Lene Nonboe	Aller.o slashed.d			DK
Schulein; Martin	Copenhagen			DK
Lange; Niels Erik Krebs	Raleigh	NC		
Bj.o slashed.rnvad; Mads Eskelund	Frederiksberg			DK
M.o slashed.ller; S.o slashed.ren	Holte			DK
Glad; Sanne O. Schr.o slashed.der	Ballerup			DK
Kauppinen; Markus Sakari	Copenhagen			DK
Schnorr; Kirk	Copenhagen			DK
Kongsbak; Lars	Holte			DK

US-CL-CURRENT: [435/232](#); [435/262](#), [435/263](#), [435/264](#), [435/267](#), [510/300](#), [536/23.2](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KIMC	Draw Desc	Image
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☐ 9. Document ID: US 6168936 B1

L6: Entry 9 of 25

File: USPT

Jan 2, 2001

US-PAT-NO: 6168936 ✓

DOCUMENT-IDENTIFIER: US 6168936 B1

TITLE: Phenol oxidizing enzymes

DATE-ISSUED: January 2, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wang; Huaming	Fremont	CA		

US-CL-CURRENT: [435/189](#); [435/320.1](#), [435/69.1](#), [536/23.1](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KIMC	Draw Desc	Image
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☐ 10. Document ID: US 6087135 A

L6: Entry 10 of 25

File: USPT

Jul 11, 2000

US-PAT-NO: 6087135

DOCUMENT-IDENTIFIER: US 6087135 A

TITLE: Modification of polysaccharides by means of a phenol oxidizing enzyme

DATE-ISSUED: July 11, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kierulff; Jesper Vallentin	Roskilde			DK

US-CL-CURRENT: 435/101; 435/136, 435/142, 435/189, 435/190, 435/72

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 11. Document ID: US 6008006 A

L6: Entry 11 of 25

File: USPT

Dec 28, 1999

US-PAT-NO: 6008006

DOCUMENT-IDENTIFIER: US 6008006 A

TITLE: Determination of glycated proteins

DATE-ISSUED: December 28, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Torrens; David John	Maidstone			GB
Shipley; Darren Paul	Maidstone			GB
Poller; Sarah Catherine	Maidstone			GB

US-CL-CURRENT: 435/23; 435/189, 435/190, 435/192, 435/219, 435/25, 435/28

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 12. Document ID: US 5981243 A

L6: Entry 12 of 25

File: USPT

Nov 9, 1999

US-PAT-NO: 5981243

DOCUMENT-IDENTIFIER: US 5981243 A

TITLE: Purified myceliophthora laccases and nucleic acids encoding same

DATE-ISSUED: November 9, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Berka; Randy Michael	Davis	CA	95616	
Brown; Stephen H.	Davis	CA	95616	
Xu; Feng	Woodland	CA	95776	
Schneider; Palle	DK-2750 Ballerup			DK
Oxenb.o slashed.ll; Karen M.	DK-2920 Charlottenlund			DK
Aaslyng; Dorrit A.	Gartnerkrogen 69			DK

US-CL-CURRENT: 435/189; 536/23.2, 8/401

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 13. Document ID: US 5866392 A

L6: Entry 13 of 25

File: USPT

Feb 2, 1999

US-PAT-NO: 5866392

DOCUMENT-IDENTIFIER: US 5866392 A

**** See image for Certificate of Correction ****

TITLE: Cellobiose oxidase, and enzymatic agent and a process for treating paper pulp

DATE-ISSUED: February 2, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schou; Charlotte	Frederiksberg			DK
Schulein; Martin	Copenhagen			DK
Vollmond; Thomas	S.o slashed.borg			DK

US-CL-CURRENT: 435/190; 435/189, 435/911

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KIMC	Draw Desc	Image
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☐ 14. Document ID: US 5843745 A

L6: Entry 14 of 25

File: USPT

Dec 1, 1998

US-PAT-NO: 5843745

DOCUMENT-IDENTIFIER: US 5843745 A

TITLE: Purified scytalidium laccases and nucleic acids encoding same

DATE-ISSUED: December 1, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Berka; Randy Michael	Davis	CA		
Thompson; Sheryl Ann	Davis	CA		
Xu; Feng	Woodland	CA		

US-CL-CURRENT: 435/189; 435/911

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KIMC	Draw Desc	Image
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☐ 15. Document ID: US 5837505 A

L6: Entry 15 of 25

File: USPT

Nov 17, 1998

US-PAT-NO: 5837505

DOCUMENT-IDENTIFIER: US 5837505 A

TITLE: Melanin production from transformed escherichia coli

DATE-ISSUED: November 17, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
della-Cioppa; Guy	Vacaville	CA		
Garger, Jr.; Stephen J.	Vacaville	CA		
Sverlow; Genadie G.	Vacaville	CA		
Turpen; Thomas H.	Vacaville	CA		
Grill; Laurence K.	Vacaville	CA		
Chedekal; Miles R.	Vacaville	CA		

US-CL-CURRENT: 435/128; 435/193, 435/244, 435/252.33, 536/23.2, 536/23.4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 16. Document ID: US 5795760 A

L6: Entry 16 of 25

File: USPT

Aug 18, 1998

US-PAT-NO: 5795760

DOCUMENT-IDENTIFIER: US 5795760 A

**** See image for Certificate of Correction ****

TITLE: Purified Myceliophthora laccases and nucleic acids encoding same

DATE-ISSUED: August 18, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Berka; Randy Michael	Davis	CA		
Brown; Stephen H.	Davis	CA		
Xu; Feng	Woodland	CA		
Schneider; Palle	Ballerup			DK
Oxenb.o slashed.ll; Karen M.	Charlottenlund			DK
Aaslyng; Dorrit A.	Vaerloese			DK

US-CL-CURRENT: 435/189; 435/243, 435/252.3, 435/254.11, 435/254.3, 435/320.1,
435/69.1, 435/71.1, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 17. Document ID: US 5770418 A

L6: Entry 17 of 25

File: USPT

Jun 23, 1998

US-PAT-NO: 5770418

DOCUMENT-IDENTIFIER: US 5770418 A

TITLE: Purified polyporus laccases and nucleic acids encoding same

DATE-ISSUED: June 23, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yaver; Debbie Sue	Davis	CA		
Xu; Feng	Woodland	CA		
Dalb.o slashed.ge; Henrik	Virum			DK
Schneider; Palle	Bellerup			DK
A.ae butted.lyng; Dorrit A.	Vaerloese			DK

US-CL-CURRENT: 435/189; 435/252.3, 435/254.11, 435/254.3, 435/320.1, 435/325, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 18. Document ID: US 5750388 A

L6: Entry 18 of 25

File: USPT

May 12, 1998

US-PAT-NO: 5750388

DOCUMENT-IDENTIFIER: US 5750388 A

TITLE: Purified scytalidium laccases and nucleic acids encoding same

DATE-ISSUED: May 12, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Berka; Randy Michael	Davis	CA		
Thompson; Sheryl Ann	Davis	CA		
Xu; Feng	Woodland	CA		

US-CL-CURRENT: 435/189; 435/252.3, 435/252.33, 435/254.1, 435/254.3, 435/320.1, 536/23.1, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 19. Document ID: US 5721125 A

L6: Entry 19 of 25

File: USPT

Feb 24, 1998

US-PAT-NO: 5721125

DOCUMENT-IDENTIFIER: US 5721125 A

TITLE: Enzymatic process for producing 4-hydroxy-cinnamyl alcohols

DATE-ISSUED: February 24, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
van Berkel; Wilhelmus Johannes H.	Wijchen			NL
De Jong; Edserd	Wageningen			NL
Fraaije; Marco Wilhelmus	Wageningen			NL

US-CL-CURRENT: 435/156; 435/189, 435/254.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 20. Document ID: US 5631151 A

L6: Entry 20 of 25

File: USPT

May 20, 1997

US-PAT-NO: 5631151

DOCUMENT-IDENTIFIER: US 5631151 A

TITLE: Melanin production by transformed organisms

DATE-ISSUED: May 20, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
della-Cioppa; Guy	Vacaville	CA		
Garger, Jr.; Stephen J.	Vacaville	CA		
Sverlow; Genadie G.	Vacaville	CA		
Turpen; Thomas H.	Vacaville	CA		
Grill; Laurence K.	Vacaville	CA		
Chedekel; Miles R.	Orland	CA		
Kumagai; Monto H.	Davis	CA		

US-CL-CURRENT: 435/133; 435/108, 435/189, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC	Draw Desc	Image
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☐ 21. Document ID: US 5624811 A

L6: Entry 21 of 25

File: USPT

Apr 29, 1997

US-PAT-NO: 5624811

DOCUMENT-IDENTIFIER: US 5624811 A

TITLE: Bilirubin oxidase from alfalfa and use of the enzyme

DATE-ISSUED: April 29, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lang; Gunter	Tutzing			DE
Bohn; Ingo	Birkenau			DE
Krell; Hans-Willi	Penzberg			DE

US-CL-CURRENT: 435/25; 435/189, 435/4, 436/63, 436/811, 436/97, 530/412, 530/413, 530/417, 530/418, 530/427

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC	Draw Desc	Image
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☐ 22. Document ID: US 5480801 A

L6: Entry 22 of 25

File: USPT

Jan 2, 1996

US-PAT-NO: 5480801

DOCUMENT-IDENTIFIER: US 5480801 A

TITLE: Purified PH neutral Rhizoctonia laccases and nucleic acids encoding same

DATE-ISSUED: January 2, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wahleithner; Jill A.	Davis	CA		
Christensen; Bjoern E.	Holte			DK
Schneider; Palle	Ballerup			DK

US-CL-CURRENT: 435/254.3; 435/252.3, 435/252.31, 435/252.33, 435/254.2, 435/254.21,
435/320.1, 536/23.2

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#)

[KIMC](#) [Draw Desc](#) [Image](#)

☐ 23. Document ID: US 5098836 A

L6: Entry 23 of 25

File: USPT

Mar 24, 1992

US-PAT-NO: 5098836

DOCUMENT-IDENTIFIER: US 5098836 A

TITLE: Deoxygenation in field preparation of polymers in aqueous solution

DATE-ISSUED: March 24, 1992

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Stahl; G. Allan	Humble	TX		
Hopkins; Thomas R.	Bartlesville	OK		

US-CL-CURRENT: 435/121; 435/119, 435/122, 435/128, 435/189, 435/190, 435/191

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#)

[KIMC](#) [Draw Desc](#) [Image](#)

☐ 24. Document ID: US 4765901 A

L6: Entry 24 of 25

File: USPT

Aug 23, 1988

US-PAT-NO: 4765901

DOCUMENT-IDENTIFIER: US 4765901 A

TITLE: Method for purifying waste water

DATE-ISSUED: August 23, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Field; James A.	Balk			NL

US-CL-CURRENT: 210/603; 210/606, 210/631, 210/632, 210/909, 210/928, 435/156, 435/189,
435/262, 435/801

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#)

[KIMC](#) [Draw Desc](#) [Image](#)

☐ 25. Document ID: US 4554249 A

L6: Entry 25 of 25

File: USPT

Nov 19, 1985

US-PAT-NO: 4554249

DOCUMENT-IDENTIFIER: US 4554249 A

TITLE: Method for the quantitative determination of physiological components in biological fluids

DATE-ISSUED: November 19, 1985

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kosaka; Akira	Seto			JP
Murao; Sawao	Sakai			JP
Hirano; Kenichi	Iwakura			JP
Tanaka; Noriaki	Sakai			JP
Matsunaga; Kuniyoshi	Ichinomiya			JP

US-CL-CURRENT: 435/10, 435/11, 435/14, 435/189, 435/25, 435/267, 435/269, 435/28, 436/175, 436/71, 436/825, 436/95, 436/97

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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L3 or L5	25

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WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 9 of 9 returned.**☐ 1. Document ID: US 20030017978 A1

L9: Entry 1 of 9

File: PGPB

Jan 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030017978

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030017978 A1

TITLE: Spfl-related transcription factors

PUBLICATION-DATE: January 23, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zhu, Qun	West Chester	PA	US	
Famodu, Omolayo O	Newark	DE	US	

US-CL-CURRENT: [514/12](#); [435/199](#), [435/320.1](#), [435/325](#), [435/69.1](#), [536/23.2](#)[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#)[KIMC](#) | [Draw Desc](#) | [Image](#)☐ 2. Document ID: US 20020182672 A1

L9: Entry 2 of 9

File: PGPB

Dec 5, 2002

PGPUB-DOCUMENT-NUMBER: 20020182672

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020182672 A1

TITLE: Enhanced secretion of a polypeptide by a microorganism

PUBLICATION-DATE: December 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kolkman, Marc	Oegstgeest		NL	

US-CL-CURRENT: [435/69.1](#); [435/252.3](#), [435/252.31](#)[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#)[KIMC](#) | [Draw Desc](#) | [Image](#)☐ 3. Document ID: US 20020173003 A1

L9: Entry 3 of 9

File: PGPB

Nov 21, 2002

PGPUB-DOCUMENT-NUMBER: 20020173003

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020173003 A1

TITLE: Directed evolution of microorganisms

PUBLICATION-DATE: November 21, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Schellenberger, Volker	Palo Alto	CA	US	
Liu, Amy D.	Mountain View	CA	US	
Selifonova, Olga V.	Los Altos	CA	US	

US-CL-CURRENT: [435/69.1](#); [435/252.3](#), [435/471](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMOC	Draw Desc	Image
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☐ 4. Document ID: US 20020164741 A1

L9: Entry 4 of 9

File: PGPB

Nov 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020164741

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020164741 A1

TITLE: Non-aqueous, liquid, enzyme-containing compositions

PUBLICATION-DATE: November 7, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Henriksen, Lotte Rugholm	Vanlose		DK	
Lykke, Mads	Bronshoj		DK	

US-CL-CURRENT: [435/189](#); [424/402](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMOC	Draw Desc	Image
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☐ 5. Document ID: US 20020160389 A1

L9: Entry 5 of 9

File: PGPB

Oct 31, 2002

PGPUB-DOCUMENT-NUMBER: 20020160389

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020160389 A1

TITLE: Method for generating a library of mutant oligonucleotides using the linear cyclic amplification reaction

PUBLICATION-DATE: October 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Rodriguez, Ana M.	Mundelein	IL	US	
Wang, Huaming	Fremont	CA	US	

US-CL-CURRENT: [435/6](#); [435/320.1](#), [435/325](#), [435/69.1](#), [435/91.2](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KM/C	Draw Desc	Image
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☐ 6. Document ID: US 20020155439 A1

L9: Entry 6 of 9

File: PGPB

Oct 24, 2002

PGPUB-DOCUMENT-NUMBER: 20020155439

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020155439 A1

TITLE: Method for generating a library of mutant oligonucleotides using the linear cyclic amplification reaction

PUBLICATION-DATE: October 24, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Rodriguez, Ana	Mundelein	IL	US	
Schellenberger, Volker	Palo Alto	CA	US	
Wang, Huaming	Fremont	CA	US	

US-CL-CURRENT: 435/6; 435/69.1, 435/7.1, 435/91.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KM/C	Draw Desc	Image
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☐ 7. Document ID: US 20020151450 A1

L9: Entry 7 of 9

File: PGPB

Oct 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020151450 = 10/080,233

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020151450 A1

TITLE: Novel phenol oxidizing enzymes

PUBLICATION-DATE: October 17, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wang, Huaming	Fremont	CA	US	

US-CL-CURRENT: 510/320; 435/189, 435/252.3, 435/254.1, 435/320.1, 435/69.1, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KM/C	Draw Desc	Image
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☐ 8. Document ID: US 20020142423 A1

L9: Entry 8 of 9

File: PGPB

Oct 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020142423 = 10/080,210

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020142423 A1

TITLE: Phenol oxidizing enzymes

PUBLICATION-DATE: October 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wang, Huaming	Fremont	CA	US	
Bodie, Elizabeth A.	San Carlos	CA	US	

US-CL-CURRENT: 435/189; 435/254.2, 435/320.1, 435/69.1, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 9. Document ID: US 20020019038 A1

L9: Entry 9 of 9

File: PGPB

Feb 14, 2002

PGPUB-DOCUMENT-NUMBER: 20020019038 *209/338,723 = A1810*
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020019038 A1

TITLE: PHENOL OXIDIZING ENXYMES

PUBLICATION-DATE: February 14, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
HUAMING, WANG	FREMONT	CA	US	

US-CL-CURRENT: 435/189

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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